

CLAIMS

What is claimed is:

1. A recording medium, comprising:
a spare area storing a replacement area that is a substitute for a defective area of the recording medium ; and
a temporary defect management area storing temporary management information identifying the defective area and the replacement area,
wherein position information and state information regarding the defective area are recorded in the replacement area.
2. The recording medium of claim 1, wherein the temporary management information is updated in the temporary defect management area every recording operation.
3. The recording medium of claim 2, further comprising a defect management area (DMA) in which temporary management information lastly updated in the temporary defect management area is recorded.
4. The recording medium of claim 3, wherein the DMA is in at least one of a lead-in area and a lead-out area of the recording medium.
5. The recording medium of claim 1, wherein the temporary defect management area is in at least one of the lead-in area and the lead-out area.
6. The recording medium of claim 1, wherein the position information and state information regarding the defective area are error-correction code (ECC) encoded during ECC encoding of data recorded in the replacement area.
7. The recording medium of claim 1, wherein ECC encoded data and the position information and state information are recorded in the replacement area.
8. A method of managing a defect in a recording medium, comprising:
recording a replacement area for a defective area of the recording medium in a spare area; and

recording temporary management information identifying the defective area and the corresponding replacement area in a temporary defect management area of the recording medium,

wherein position information and state information regarding the defective area are recorded in the replacement area.

9. The method of claim 8, wherein the temporary management information is recorded in the temporary defect management area in at least one of a lead-in area and a lead-out area of the recording medium.

10. The method of claim 8, further comprising recording temporary management information, which is lastly recorded in the temporary defect management area, in a defect management area (DMA) during a finalizing of the recording medium.

11. The method of claim 10, wherein the lastly recorded temporary management information is recorded in the DMA in at least one of a lead-in area and a lead-out area of the recording medium.

12. The method of claim 8, wherein the position information and state information are ECC encoded along with an ECC encoding of data to be recorded in the replacement area.

13. The method of claim 8, wherein the position information and state information and ECC encoded data are recorded in the replacement area.

14. The method of claim 8, wherein the recording of the temporary defect management information is performed whenever the recording of the replacement area or recording of multiple replacement areas is performed.

15. The method of claim 8, wherein the recording of the replacement area, or recording of multiple replacement areas, represents a recording operation, and the recording of the temporary defect management information is performed every recording operation.

16. An apparatus, comprising:
a recording/reading unit recording data to and/or from a recording medium; and
a controller controlling the recording of data to a replacement area, for a defective area of the recording medium, in a spare area of the recording medium, the recording/reading unit to record temporary management information identifying the defective area and the replacement area in a temporary defect management area, and controlling the recording/reading unit to record position information and state information regarding the defective area in the replacement area.
17. The apparatus of claim 16, wherein the controller controls the recording/reading unit to record the temporary management information in the temporary defect management area formed in at least one of a lead-in area and a lead-out area of the recording medium.
18. The apparatus of claim 16, wherein the controller controls the recording/reading unit to record temporary management information lastly recorded in the temporary defect management area in a defect management area (DMA), during a finalizing of the recording medium.
19. The apparatus of claim 16, wherein the controller controls the recording/reading unit to record temporary management information lastly recorded in the temporary defect management area in a defect management area (DMA) in at least one of the lead-in area and the lead-out area.
20. The apparatus of claim 16, wherein the controller controls the recording/reading unit to ECC encode the position information and the state information with data to be recorded in the replacement area.
21. The apparatus of claim 16, wherein the controller controls the recording/reading unit to record the position information and state information and ECC encoded data in the replacement area.

22. A method of managing a defect in a recording medium, comprising:
determining whether recording medium defect management has been successfully completed;
reading lastly recorded defect information from a replacement area, of the recording medium, for a defective area of the recording medium, and generating new defect information when the recording medium defect management is determined to have not been successfully completed; and
updating defect management information in a defect management area (DMA) of the recording medium based on the generated defect information.

23. The method of claim 22, wherein the determining of whether the recording medium defect management was successfully completed is determined by checking a consistency flag on the recording medium.

24. The method of claim 22, wherein the generating of the new defect information further comprises reading position information regarding the defective area from the replacement area.

25. The method of claim 22, wherein the recording of the lastly recorded defect information further comprises reading state information regarding the defective area from the replacement area.

26. The method of claim 22, wherein the generating of the new defect information further comprises generating the new defect information based on previous defect information and the read defect information.

27. A method of managing a defect in a recording medium, comprising:
determining whether recording medium defect management has been previously successfully completed;
scanning a portion of the recording medium purportedly containing no recorded data, as identified in a spare bit map (SBM), and verifying whether the portion contains no recorded data; and

updating the SBM to precisely reflect a recording state of the recording medium based on the verification of the portion of the recording medium.

28. The method of claim 27, wherein the updating of the SBM further comprises recording an updated SBM as temporary management information in a temporary defect management area on the recording medium.

29. An apparatus, comprising:
a recording/reading unit recording data to and/or from a recording medium; and
a controller determining whether recording medium defect management has previously been successfully completed, controlling the recording/reading unit to record lastly recorded defect information from a replacement area and generate new defect information when the recording medium defect management is determined to not have previously been successfully completed, and controlling the recording/reading unit to update a defect management area (DMA) of the recording medium, based on the generated defect information.

30. The apparatus of claim 29, wherein the controller controls the reading of a consistency flag from the recording medium and determines whether the recording medium defect management has been successfully completed on the recording medium based on the consistency flag.

31. The apparatus of claim 29, wherein the controller controls the reading of position information regarding the defective area from the replacement area and generates the new defect information .

32. The apparatus of claim 29, wherein the controller reads state information regarding the defect from the replacement area and generates the new defect information.

33. The apparatus of claim 29, wherein the controller creates the new defect information based on previous defect information and the read defect information.

34. An apparatus, comprising:
a pickup recording data to and/or from a recording medium; and

a controller controlling the pickup to record and/or read data to determine whether recording medium defect management has previously been successfully completed, and scanning a portion of the recording medium purportedly containing no recorded data, as identified in a lastly recorded spare bit map (SBM) on the recording medium, in order to verify whether data is recorded in the portion when the recording medium defect management is determined to not have previously been successfully completed, and updating the SBM to precisely reflect the recording state of the recording medium based on the verification of the portion of the recording medium.

35. The apparatus of claim 34, wherein the controller controls the recording of the updated SBM as temporary management information in a temporary defect management area of the recording medium.

36. A computer-readable medium comprising computer readable code for controlling a reproducing and/or recording apparatus to perform the method of claim 8.

37. A computer-readable medium comprising computer readable code for controlling a reproducing and/or recording apparatus to perform the method of claim 22.

38. A computer-readable medium comprising computer readable code for controlling a reproducing and/or recording apparatus to perform the method of claim 27.